

Fundamental Mechanics: Quiz 2

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Formulae: $v_{\text{avg}} = \frac{\Delta x}{\Delta t} = \frac{x_f - x_i}{t_f - t_i}$ $\Delta x = v_{\text{avg}} \Delta t$ v_{avg} = slope of position vs time
 $a_{\text{avg}} = \frac{\Delta v}{\Delta t} = \frac{v_f - v_i}{t_f - t_i}$ $\Delta v = a_{\text{avg}} \Delta t$ a_{avg} = slope of velocity vs time

Δx = area under velocity vs time

An ant walks along one direction and the graph of the ant's velocity vs. time is as illustrated, starting at position $x = 10$ m at time $t = 0$ s. Determine the ant's **position** and **acceleration** at $t = 2$ s.

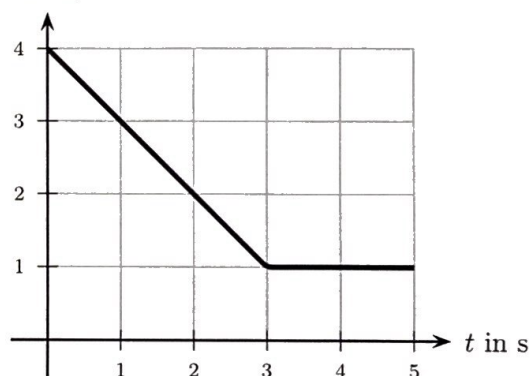
$x_0 = 10$
 \uparrow
 Position $_0 = 10$

10 m

0 s

$v_0 = 4 \text{ m/s} + 0.5$
 $v_1 = -1 \text{ m/s}$ ~~WWSB~~
 $v_2 = -1 \text{ m/s}$ ~~WWSB~~

v in m/s



Position = ~~8 m~~ (-3)
 acceleration = -1 m/s

How did you get this from your numbers for velocity? (-1.5)